

VULCAN

**INSTALLATION &
OPERATION MANUAL**

SAR34 GAS SALAMANDER BROILER

ML-52197



MODEL SAR34

VULCAN-HART COMPANY, P.O. BOX 696, LOUISVILLE, KY 40201-0696, TEL. (502) 778-2791

FORM 30665, Rev. B (8-95)

IMPORTANT FOR YOUR SAFETY

THIS MANUAL HAS BEEN PREPARED FOR PERSONNEL QUALIFIED TO INSTALL GAS EQUIPMENT, WHO SHOULD PERFORM THE INITIAL FIELD START-UP AND ADJUSTMENTS OF THE EQUIPMENT COVERED BY THIS MANUAL.

POST IN A PROMINENT LOCATION THE INSTRUCTIONS TO BE FOLLOWED IN THE EVENT THE SMELL OF GAS IS DETECTED. THIS INFORMATION CAN BE OBTAINED FROM THE LOCAL GAS SUPPLIER.

IMPORTANT

IN THE EVENT A GAS ODOR IS DETECTED, SHUT DOWN UNITS AT MAIN SHUTOFF VALVE AND CONTACT THE LOCAL GAS COMPANY OR GAS SUPPLIER FOR SERVICE.

FOR YOUR SAFETY

DO NOT STORE OR USE GASOLINE OR OTHER FLAMMABLE VAPORS OR LIQUIDS IN THE VICINITY OF THIS OR ANY OTHER APPLIANCE.

WARNING

IMPROPER INSTALLATION, ADJUSTMENT, ALTERATION, SERVICE OR MAINTENANCE CAN CAUSE PROPERTY DAMAGE, INJURY OR DEATH. READ THE INSTALLATION, OPERATING AND MAINTENANCE INSTRUCTIONS THOROUGHLY BEFORE INSTALLING OR SERVICING THIS EQUIPMENT.

IN THE EVENT OF A POWER FAILURE, DO NOT ATTEMPT TO OPERATE THIS DEVICE.

TABLE OF CONTENTS

GENERAL	4
INSTALLATION	4
Unpacking	4
Location	5
Installation Codes and Standards	6
Assembly — Free Standing Models	6
Assembly — Over Heavy Duty Gas Range	6
Assembly — Over Gas Restaurant Range	7
Gas Connections	8
Testing the Gas Supply System	9
Ceramic Bricks	9
Air Shutter Adjustment	10
OPERATION	11
Controls	11
Lighting the Pilot Light	12
Preheating	12
Efficient Operation	12
Recipe and Grid Adjustment	12
Loading and Unloading	13
Cleaning	13
Burner Performance	13
Carbonization of Ceramic	13
MAINTENANCE	14
Vent	14
Service and Parts Information	14
TROUBLESHOOTING	15

Installation, Operation and Care of MODEL SAR34 GAS SALAMANDER BROILER

KEEP THIS MANUAL FOR FUTURE REFERENCE

GENERAL

Your Vulcan-Hart Gas Broiler is suitable for use in restaurant, commercial or institutional kitchens. The broiler is produced with quality workmanship and material. Proper installation, usage and maintenance of your broiler will result in many years of satisfactory performance.

Vulcan-Hart Company suggests that you thoroughly read this entire manual and carefully follow all of the instructions provided.

SAR34 Broilers are available in two styles:

1. Elevated Model — mounts over Heavy Duty Gas Range or Gas Restaurant Range (34" width minimum).
2. Free Standing Model — mounts on a non-combustible countertop with minimum 2 $\frac{1}{2}$ " high leg clearance. Two 4" leg stands are provided.

INSTALLATION

Before installing, verify that the type of gas (natural or propane) agrees with the data plate on the body top of the broiler.

UNPACKING

Your broiler was carefully inspected before leaving the factory. The transportation company assumes full responsibility for safe delivery upon acceptance of the shipment. Immediately after unpacking, check for possible shipping damage. If the broiler is found to be damaged, save the packaging material and contact the carrier within 15 days of delivery.

LOCATION

Do not obstruct the air flow into and around the broiler. This air flow is necessary for proper combustion of gases and for ventilation of the broiler.

Do not obstruct the flow of flue gases from the flue duct of the broiler. It is recommended that the flue gases be ventilated to the outside of the building through a ventilation system installed by qualified personnel.

If mounted over a range equipped with casters, the minimum width of the range is 60 inches and the following restrictions apply:

1. The installation shall be made with a connector that complies with the Standard for Connectors for Movable Gas Appliances, ANSI Z21.69 (latest edition), and a quick-disconnect device that complies with the Standard for Quick-Disconnect Devices for Use With Gas Fuel, ANSI Z21.41 (latest edition).
2. Provide a restraining device for the gas line to limit the movement of the range without depending on the connector and the quick-disconnect device or its associated piping to limit the range movement. Attach the strain relief to the rear of the range (Fig. 1).

If disconnection of the strain relief is necessary, turn off the gas supply before disconnection. Reconnect this restraint before turning the gas supply on and returning the range to its installation position.

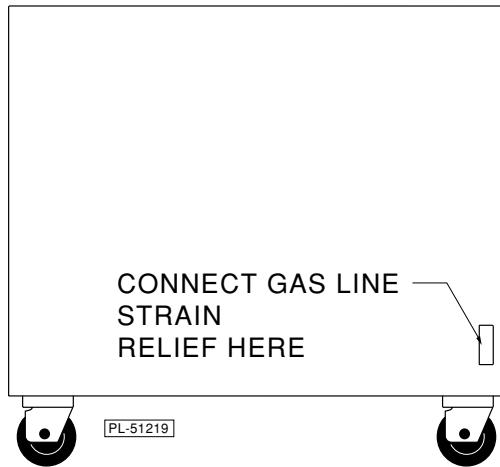


Fig. 1

Maintain a minimum 6" clearance at the sides and rear next to combustible and non-combustible construction. Maintain an 18" clearance from the end of the broiler flue vent to the filters of the hood venting system.

Keep the area free and clear of all combustible substances.

The installation location must allow adequate clearances for servicing and proper operation. A minimum front clearance of 18" is required.

Make sure there are no cross currents within the kitchen (such as wall-type fans, open windows next to the broiler, or fans blowing directly on the broiler).

INSTALLATION CODES AND STANDARDS

The broiler must be installed in accordance with:

1. State and local codes.
2. In USA . . . National Fuel Gas Code, ANSI Z223.1 (latest edition) available from the American Gas Association, Inc., 1515 Wilson Blvd., Arlington, VA 22209.

In Canada . . . Canadian Standard CAN/CGA-B149.1 Installation for Natural Gas Burning Appliances and Equipment (latest edition), and CAN/CGA-B149.2 Installation for Propane Burning Appliances and Equipment (latest edition), available from The Canadian Gas Association, 55 Scarsdale Road, Don Mills, Ontario, Canada M3B2R3.

3. NFPA 96, Vapor Removal from Cooking Equipment (latest edition), available from the National Fire Protection Association, Batterymarch Park, Quincy, MA 02269.

ASSEMBLY — Free Standing Models

Assemble 4" leg stands to bottom of broiler.

ASSEMBLY — Over Heavy Duty Gas Range

If the broiler is to be mounted over a Vulcan Heavy Duty Gas Range, a broiler back riser is required. This is furnished when ordered as an elevated broiler.

1. With the back down, place the riser on the floor in front of the range. Remove the backsplash panel from the back riser and two mounting bolts at top.
2. Remove the top castings, the back top and the shipping brackets from the range.
3. Carefully lift the back riser over the range, guiding the riser supports (or bayonets) into the channels provided at the rear of the range (Fig. 2). Depending on range width, there may be two or three riser supports.

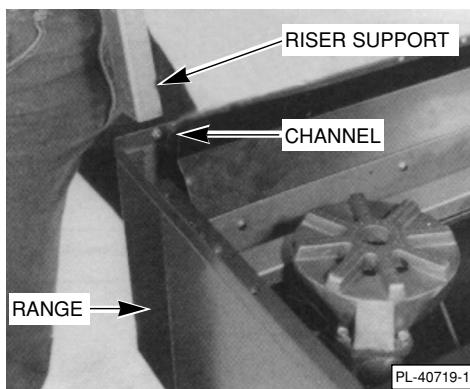


Fig. 2

4. Replace back top(s) and top castings on range.
5. After unpacking, remove the grid, drip pan and drip pan insert from the broiler.
6. **Make sure the mounting brackets are firmly attached to the top of the broiler.** Carefully lift the broiler so that the broiler support brackets are approximately one inch above the flue outlet of the back riser. Carefully guide the mounting brackets attached to the broiler over the mounting brackets on the top of the back riser. Lower the broiler so that all four brackets, two on top and two at the bottom, are supporting the broiler.
7. Reinstall the two mounting bolts at top of the back riser (Fig's. 3 and 4).

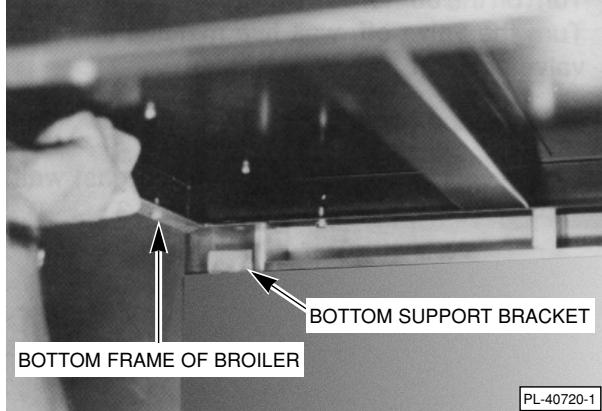


Fig. 3

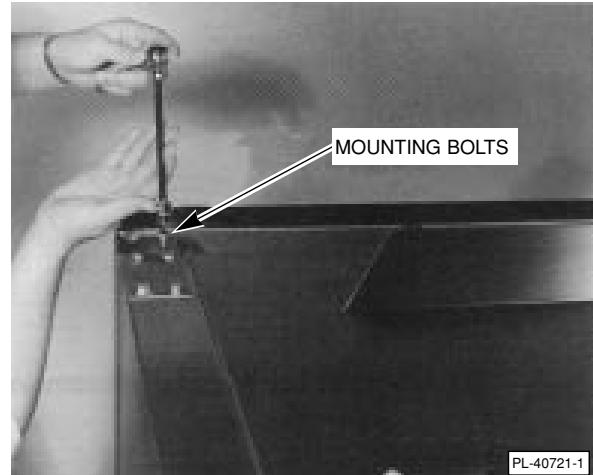


Fig. 4

8. Attach the backsplash panel to the back riser. Attach shelf to back riser if included.

ASSEMBLY — Over Gas Restaurant Range

If the broiler is to be mounted over a Vulcan Gas Restaurant Range, a broiler back riser is required (furnished when ordered as an elevated broiler).

1. Mount back riser onto Gas Restaurant Range so riser supports slide into the channels on the back of the range (similar to heavy duty range, Fig. 2). Attach screws to channels on rear of range. Mounting brackets for broiler and support beam are assembled onto the back riser at the factory. Remove the two mounting bolts from top of support brackets on back riser.
2. Assemble two support brackets to the top rear corners of the broiler. Remove four bolts on each corner; install brackets under bolts (Fig. 5).
3. Remove bottom cover of broiler (8 screws).
4. Carefully lift the broiler so brackets fit over the rail (beam support) on top of the backsplash and so the bottom of the broiler is supported by the two bottom support brackets (Fig. 6).

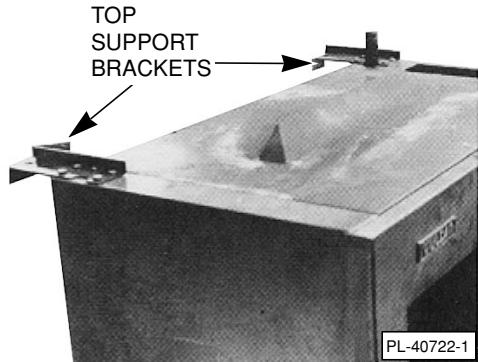


Fig. 5

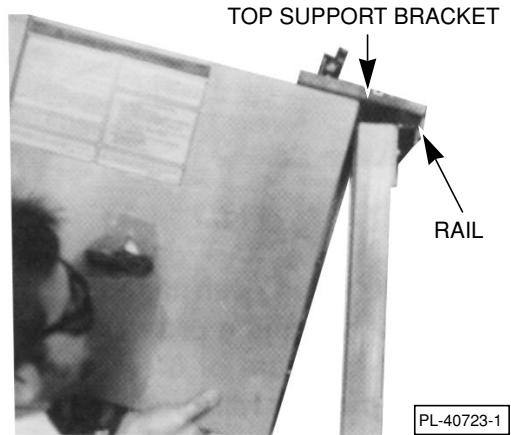


Fig. 6

5. Line up holes on top brackets. Attach self-tapping screw to each top bracket, and attach $3/8$ -16 bolt to each top bracket. Bolt thread through weld-nut on rail (beam support).
6. Reassemble bottom cover on broiler (8 screws).
7. Attach shelf to back riser if included.

GAS CONNECTIONS

CAUTION: All gas supply connections and any pipe joint compound used must be resistant to the action of propane gases.

Codes require that a gas shutoff valve be installed in the gas line ahead of the broiler.

Install the pressure regulator to the top gas connection. The arrow on the regulator indicates the direction of the gas flow (Fig. 7).

The regulator must be installed within the tower in an upright position. If it is mounted in any other position, the pressure must be reset (Fig. 8).

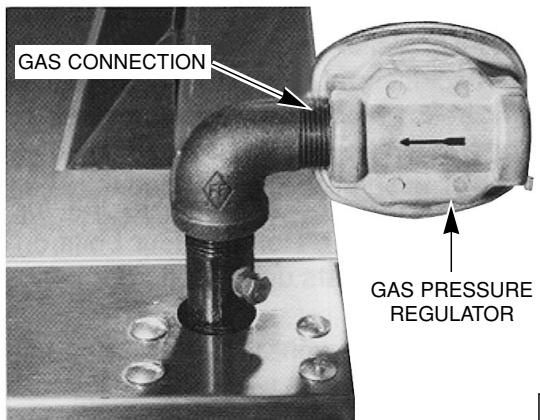


Fig. 7

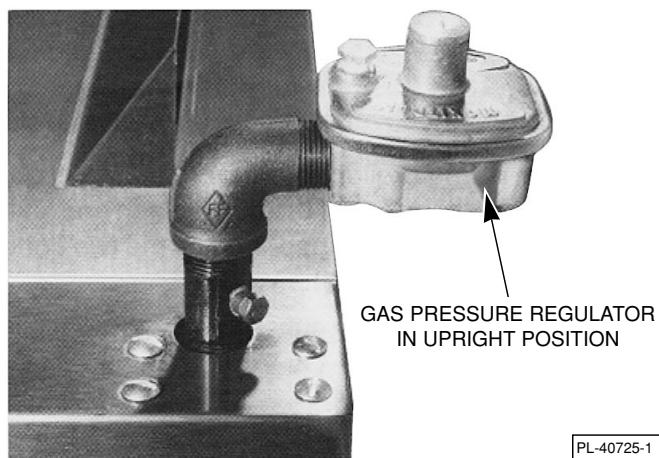


Fig. 8

Standard broilers for use with natural gas are equipped with fixed orifices and a pressure regulator with a preset outlet pressure of 6" W.C. (water column). Standard broilers for use with propane gas are equipped with fixed orifices and a pressure regulator with a preset outlet pressure of 10" W.C.

Once the regulator is installed, connect to a $\frac{3}{4}$ " gas line.

WARNING: PRIOR TO LIGHTING, CHECK ALL JOINTS IN THE GAS SUPPLY LINE FOR LEAKS. USE SOAP AND WATER SOLUTION. DO NOT USE AN OPEN FLAME.

After piping has been checked for leaks, all piping receiving gas should be fully purged to remove air.

TESTING THE GAS SUPPLY SYSTEM

When test pressures exceed $\frac{1}{2}$ psig (3.45 kPa), the broiler/range and its individual shutoff valve must be disconnected from the gas supply piping system.

When testing pressures are $\frac{1}{2}$ psig (3.45 kPa) or less, the broiler/range must be isolated from the gas supply system by closing its individual manual shutoff valve.

CERAMIC BRICKS

Remove the grid, drip pan, and the drip pan insert in the broiler. Place ceramic bricks, with projections down, along the length of the burners. The notches on the burners will properly position the bricks (Fig. 9). The four wider bricks are placed resting evenly between the center of the two broiler burners. Mount the remaining eight side bricks, four to the right outer side and four to the left outer side of the burner, with the brick (L) section resting on the burner ledge.

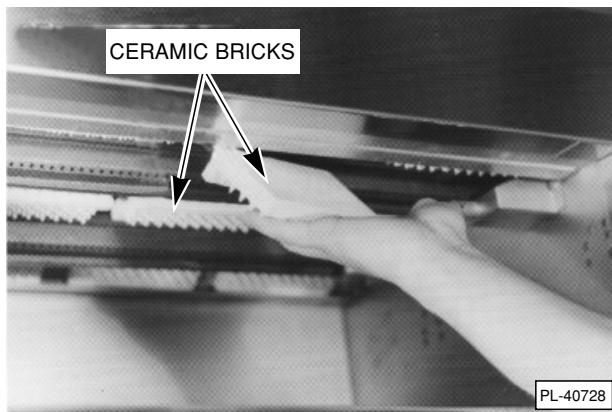


Fig. 9

Turn on the gas valve and allow any air in the line to be exhausted. When the gas begins to flow, turn the gas valve off and wait five minutes before lighting the pilots with a match or taper. The burner flame should be sharp when the broiler is cold, with a blue cone or flame about $\frac{3}{4}$ " long on natural gas and $\frac{1}{2}$ " long on propane. The flame will soften out and curl around the ceramic as the broiler gets hot. The length of the flame is determined by the adjustment of the gas nozzles and the sharpness of the flame is determined by the air shutter adjustment.

Replace the grid, drip pan, and the drip pan insert in the broiler.

AIR SHUTTER ADJUSTMENT

Air shutters are preset at the factory.

1. Remove the screw from the access panel at the top of the right body side.
2. Remove the access panel (Fig. 10).

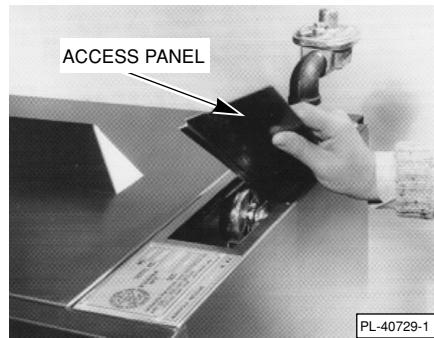


Fig. 10

3. Loosen the lockdown screws on the air mixers and rotate the air shutters to their proper adjustment. Tighten the lockdown screw (Fig's. 11 and 12).

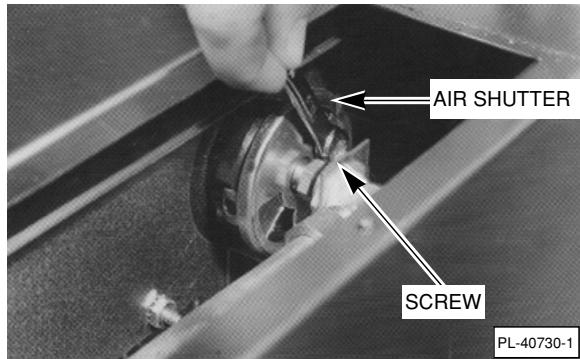


Fig. 11



Fig. 12

4. Replace the access panel.

OPERATION

WARNING: THE BROILER AND ITS PARTS ARE HOT. BE CAREFUL WHEN OPERATING, CLEANING OR SERVICING THE BROILER.

CONTROLS (Fig. 13)



Fig. 13

Grid Lifting Handle — Elevates or lowers the broiling grid to six different positions. Grasp red ball knob and pull straight out from the broiler. This releases the mechanism and allows the lifting handle to move into the desired position.

Burner Valve — Regulates the flow of gas to the burners. Gas flow is increased by turning the valve counterclockwise. After preheating, maximum output is not required. Turn the valve clockwise until the desired performance is achieved.

Broiler Grid Handle — Glides the grid forward for easy loading and unloading.

WARNING: HANDLE MAY BE HOT. GRASP HANDLE WITH MITT OR HOTPAD.

To operate, pull straight out; grid rolls on four roller bearings.

Grease Pan — Collects grease and waste which is diverted by the tilt of the drip shield. DO NOT allow the grease pan to overflow. Empty the grease pan when three-quarters full to reduce the possibility of spillage.

LIGHTING THE PILOT LIGHT

1. Turn on the main gas supply.
2. Turn on the burner valve and purge air from the line. Turn the burner valve off, wait five minutes and turn the valve back on.
3. Using a taper, light the pilots (Fig.14).
4. If the pilots fail to light, turn off the gas, wait five minutes and repeat Steps 1 through 3.

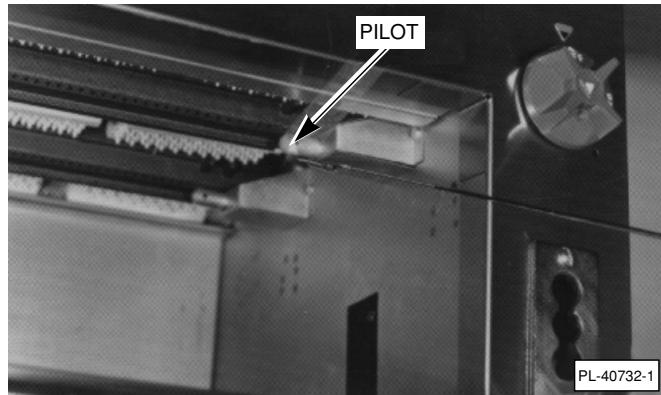


Fig. 14

Nightly Shutdown: Turn off the burner valve. The pilot will remain lit.

Seasonal Shutdown: Turn off the burner valve. Turn off the pilots. Turn off the main gas supply.

PREHEATING

Place the grid in its highest position. Turn the burner valve knob completely counterclockwise and preheat for 15 minutes.

EFFICIENT OPERATION

Efficient operation depends on a balance between the volume of gas and supply of air. If complete combustion of the gas is not achieved, poor operating characteristics and excessive gas consumption will occur.

RECIPE AND GRID ADJUSTMENT

Positioning the broiler grid is an important factor in the desired product end results. Position the grid farther away from the burners for thick meats and for melting cheese or butter to avoid drying the product. Position the grid closer to the burners for bacon, toast and quick heating, but watch carefully to avoid burning.

LOADING AND UNLOADING

Place the grid in the desired position. Pull the grid out for loading. Load as quickly as possible and avoid spillage. Push the grid back into place and cook for the appropriate time. Lower and pull the grid out for unloading.

CLEANING

PermaFinish surfaces can be cleaned using a cloth with detergent solution. Rinse thoroughly and wipe dry with a soft clean cloth. An occasional application of silicone base auto polish will help maintain a "like new" appearance.

Stainless steel surfaces may be cleaned with a damp cloth. Stubborn soil can be removed with a detergent solution. Rinse thoroughly and wipe dry with a soft clean cloth.

Clean the grid every day at nightly shutdown. Allow the broiler to cool before removing the grid and the drip tray for cleaning.

BURNER PERFORMANCE

If, after a period of satisfactory operation, burner flame characteristics should change or the length of the burner flame should be reduced, either the air mixer opening or the gas valve orifice has become restricted. Clean the burners every 60 days, or more often if required.

CARBONIZATION OF CERAMIC

If ceramics take on a black sooty accumulation, the burners are receiving an insufficient amount of air. The air shutter needs to be opened further. If carbonization occurs during the initial adjustment, it will burn off as soon as adjustment is achieved.

MAINTENANCE

WARNING: THE BROILER AND ITS PARTS ARE HOT. BE CAREFUL WHEN OPERATING, CLEANING OR SERVICING THE BROILER.

VENT

Annually, after the broiler is cool, check the flue and clear any obstructions.

SERVICE AND PARTS INFORMATION

To obtain service and parts information concerning the broilers covered in this manual, contact the Vulcan-Hart Service Depot in your area (refer to listing supplied with the broiler), or Vulcan-Hart Company Service Department at the address or phone number shown on the front cover of this manual.

TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSES
Uneven broiling Side burning	<ol style="list-style-type: none">1. Temperature too low2. Improper operation of broiler3. Fluctuating gas pressure
Too much top heat	<ol style="list-style-type: none">1. Temperature too high2. Faulty ventilation3. Excessive heat input4. Over-rated (pressure too high or orifice(s) too large)
Uneven broiling side-to-side	<ol style="list-style-type: none">1. Broiler not level side-to-side2. Broiler burner or ceramics improperly installed
Uneven broiling front-to-back	Broiler not level front-to-back
Dried out products	<ol style="list-style-type: none">1. Broiling time too long, or product too close to burners2. Over-rated (pressure too high or orifice(s) too large)
Pilot outage	<ol style="list-style-type: none">1. Pilot flame too low2. Restriction in pilot orifice
Poor ignition	<ol style="list-style-type: none">1. Insufficient gas input2. Poor air-to-gas adjustment3. Restriction in pilot orifice4. Restriction in main burner ignition port5. Pilot adjustment is incorrect

